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A new record of the Japanese Longhorn decorator crab *Chorilia japonica* (Miers, 1879) (Crustacea: Brachyura: Epialtidae) in the western part of Bering Sea — the first record of the species and genus for Russian waters

Новая находка японского острорылого краба-декоратора *Chorilia japonica* (Miers, 1879) (Crustacea: Brachyura: Epialtidae) в западной части Берингова моря — первая находка вида и рода для вод России

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KEY WORDS. Crustacea, Decapoda, Epialtidae, *Chorilia*, new record, Bering Sea, Northern Hemisphere, Russia.

КЛЮЧЕВЫЕ СЛОВА. Crustacea, Decapoda, Epialtidae, *Chorilia*, новая находка, Берингово море, Северное полушарие, Россия.

ABSTRACT. A male specimen of *Chorilia japonica* (Miers, 1879) (Crustacea, Brachyura, Epialtidae) was collected in the Bering Sea, southwest of Navarin Cape, at the depth of 283–298 m. This represents the first record of the genus *Chorilia* Dana, 1851 for Russia and is the most northern record of the genus in north-western Pacific; and is a range extension of more than 3000 km for the species. The specimen is diagnosed and the taxonomy of the genus discussed.

РЕЗЮМЕ. Самец краба *Chorilia japonica* (Miers, 1879) (Crustacea, Brachyura, Epialtidae) обнаружен в Беринговом море, в районе Мыса Наварин, на глубине 283–298 м. Этот вид и род крабов впервые обнаружен в водах России, а также данная находка является самой северной для рода в северо-западной части Тихого Океана, увеличивая область распространения рода почти на 3000 км. Представлено описание собранного экземпляра и обсуждение таксономии данного рода.

Introduction

According to WoRMS the longhorn decorator crab genus *Chorilia* Dana, 1851 (Brachyura, Majoidea, Epialtidae) representiy includes three valid species, all from the northern Pacific: *C. japonica* (Miers, 1879) (central to northeastern Japan), *C. longipes* Dana, 1851 (type species, Alaska to Monterey Bay, California), *C. turgida* Rathbun, 1924 (Monterey Bay to San Diego, California and Cortex Bank, Mexico) [Miers, 1879; Rathbun, 1925; Sakai, 1976; Ng et al., 2008; Hendrickx, in press; WoRMS]. The genus resembles both *Rochinia* A. Milne-Edwards, 1875 and *Hyastenus* White, 1847 by a V-shape rostrum diverging from its base, the absence of an intercalated spine between the supraorbital eave and postorbital tooth. Nevertheless *Chorilia* can be separated from *Rochinia* by the spinulation of dorsal surface of carapace and tropical distribution of the latter genus [Ng, Richer de Forges, 2007; Ng et al., 2008], from *Hyastenus* only by the fact that the preobital spine is long and sharp, and the diameter of the cornea is no wider than the ocular peduncle in *Chorilia* [Sakai, 1976; Griffin, Tranter, 1986]; in *Hyastenus*, the preobital spine is low, and the diameter of the cornea is wider than the ocular peduncle. *Chorilia* also grows to larger sizes than *Rochinia* and *Hyastenus*, reaching sizes of 50–70 mm in carapace length, and is restricted to sublittoral area of higher latitudes of the Northern Hemisphere [Rathbun, 1925; Sakai, 1976]. Although *Chorilia* is known from northern Japan, it has not been reported from any location further north, with no previous records from the Sea of Japan, Russian Okhotsk and Bering Seas [Marin, 2013a, b].

However, during a fishing survey on the vessel "Stella Karina" in June 2014, the third author collected one male specimen of *Chorilia* in a trawl in the Bering Sea, southwest of Navarin Cape, at the depth of 283–298 m. This is the first record of the genus *Chorilia* for Russia and the most northern record in the western North Pacific. The specimen best agrees with *Chorilia japonica* and represents a substantial range extension for the species of more than 3000 km.

Material and methods

The single mature male (cl 47.0 mm, cw 25.0 mm) was collected by third author by dredging on trawler "Stella Karina" in west part of Bering Sea, south-east of Navarin Cape, 61°5.2′N 179°4.8′W–61°57.1′N 179° 3.7′W, at the depth of 283–298 m, with water temperature about 3.2–3.7 °C, in 2 June 2014. Other animals in the same trawl were pandalid and crangonid shrimps *Pandalus borealis*, *Argis ovifer*, *Neocrangon communis* as well as remains of unidentified suberitid sponges, brittle stars, sea urchins, squids and fishes. The collected specimen was photographed alive and then fixed with 70% solution of ethanol. The specimen is deposited the collection of Zoological Museum of Moscow State University (ZMMU). Carapace length (cl, in mm), the distance from tip of rostrum to postero-dorsal margin of carapace, and carapace width (cw, in mm), the distance between lateral margins of carapace in its widest part, are used as standard measurements. Only primary synonyms are given.

Taxonomy

Epialtidae MacLeay, 1838
Chorilia Dana, 1851

Chorilia japonica (Miers, 1879)
Fig. 1.

Hyastenus (*Chorilia*) *japonica*: Miers, 1879: 27 [type locality: Japan, 41°40′N 141°10′E, 100 fathoms]

MATERIAL EXAMINED. Mature male (cl 47.0 mm, cw 25.0 mm), ZMMU — Pacific Ocean, west part of Bering Sea, south-east of Navarin Cape, trawler "Stella Karina", trawl No.50, 61°5.2′N 179°4.8′W–61°57.1′N 179°3.7′W, 283–298 m, 3.2–3.7 °C, coll. S. Anosov, 2 June 2014. Other animals in the same trawl were pandalid and crangonid shrimps *Pandalus borealis*, *Argis ovifer*, *Neocrangon communis* as well as remains of unidentified suberitid sponges, brittle stars, sea urchins, squids and fishes.

BRIEF DIAGNOSIS OF MALE (Fig. 1). Carapace pyriform; regions demarcated, gastric region with 2 sharp median tubercles, anterior one larger, epibranchial spines short, sharp, curved anteriorly; rostrum long (ca. 0.5 carapace length), spines long, slender, straight, diverging from base forming deep V-shape; preocular spine prominent, acutely triangular, directed obliquely; without intercalated spine between supraocular eave and postocular tooth; narrow U-shaped hiatus between supraocular eave and postocular tooth; basal antennal article long, narrow, with proximal spine and slender anterolateral spine; chelipeds elongated, dorsal margin of merus with 2 sharp teeth on proximal half, ventral margin with scattered small tubercles, dorsal and ventral margins of chela cristate; ambulatory legs elongated, subcylindrical, merus, carpus and propodus unarmed.

REMARKS. The genus *Chorilia* has generally been regarded as containing only one boreal species, *C. longipes* Dana, 1851, with three subspecies: *C. longipes longipes* Dana, 1851, *C. longipes turgida* Rathbun, 1924, and *C. longipes japonica* (Miers, 1879) [see Rathbun, 1925: 202; Garth, 1958: 263; Griffin, Tranter, 1986: 112]. Ng et al. [2008: 102] treated all three as full species. The differences between the two American species have been discussed at length by Rathbun [1925] and Garth [1958], and are most easily separated by the degree of spinulation on the dorsal surface of the carapace (more spinulated in *C. turgida*), the proportions of the movable articles of the antenna (relatively more slender and longer in *C. turgida*) and their mostly discrete distributions (see earlier). *Chorilia japonica* was described by Miers [1879: 27] from Japan, and he noted that it differed mainly from the American taxa by possessing relatively shorter more divergent, shorter spines on the basal antennal article and less spinulated upper surface of the merus of the cheliped. Of these, the only feature that seems to usually work is the more divergent rostral spines; the other characters being too variable. Although American *Chorilia* species usually have the distal half of the rostral spines being subparallel rather than continuously divergent, it is not always the case [e.g., see Garth, 1958: Pl. 30 fig. 2 for *C. turgida*]. Another character that works in adult specimens is the relative proportion of their ambulatory legs; *C. japonica* has proportionately shorter meri [cf. Fig. 1d; Miers 1879: pl. 1 fig. 2; Sakai, 1976: pl. 78 fig. 3] compared to *C. longipes* and *C. turgida* [cf. Rathbun, 1925: pl. 225; Garth, 1958: pl. 30 figs. 1, 2]. A revision examining a large series of specimens of all three species, preferably with molecular-phylogenetic analysis would be useful to throw more light on their taxonomy.

The present specimen from Russia agrees best with *C. japonica* in all the salient characters discussed above, and it seems best to refer it to this taxon for the time being. *Chorilia japonica* has been reported from the islands of Shikoku to Hokkaido in Japan [Sakai, 1976; Miyake, 1998]. In view of the substantial distance (some 3000 km) between the present location and where it was last reported in Japan, a larger series of specimens from Russia is clearly necessary for further comparisons.

The discovery of *C. japonica* in Russian waters is not surprising and follows reports of several other decapod species recently recorded from Russia and adjacent regions [Marin et al., 2011; Marin, 2013c–e; Hong, Lee, 2014].

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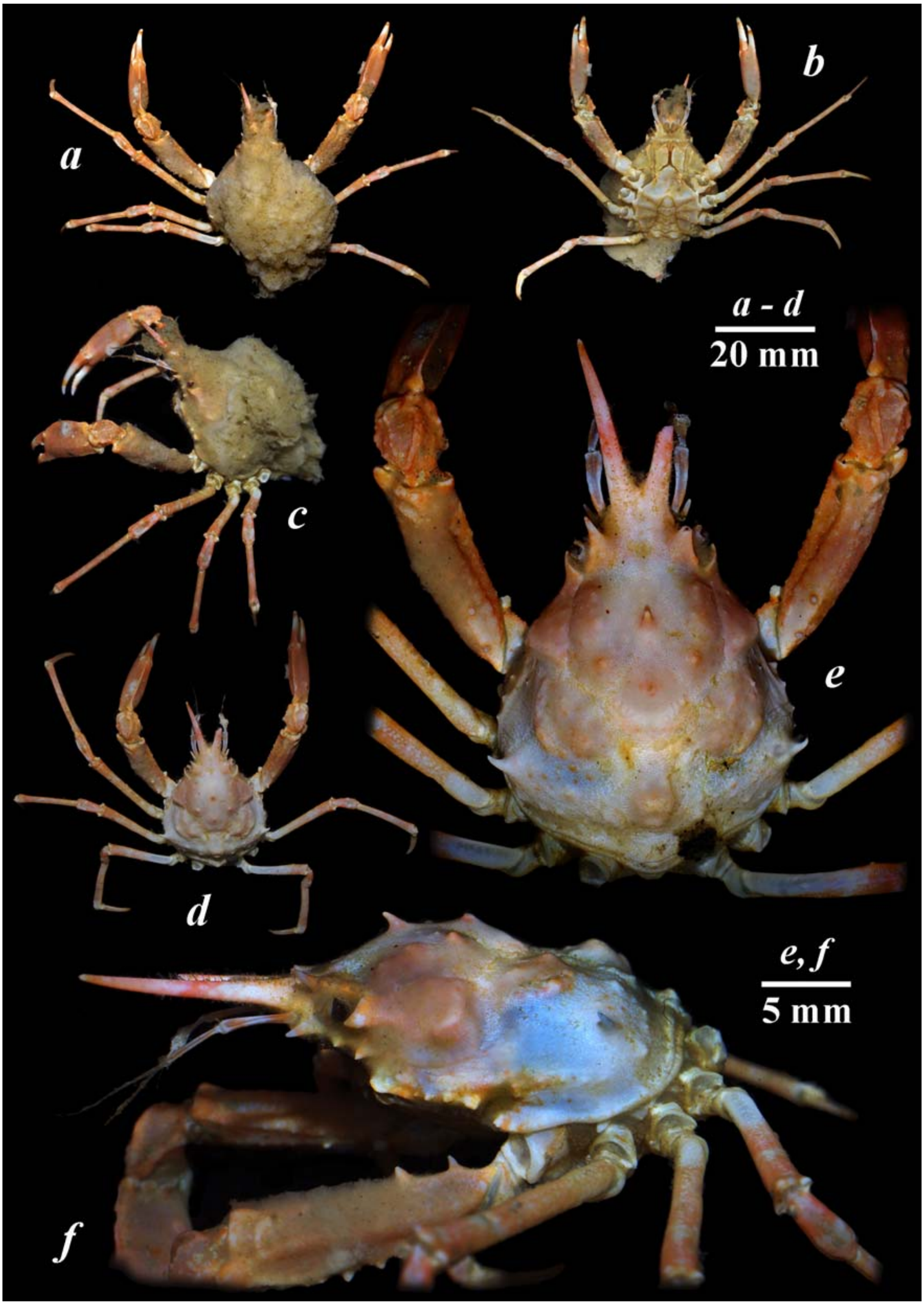


Fig. 1. Male specimen of *Chorilia japonica* (Miers, 1879), ZMMU, from western part of Bering Sea: *a–c* — specimen covered by small sponge (possibly, Suberitidae); *d* — cleaned specimen, dorsal view; *e* — carapace, dorsal view; *f* — carapace, lateral view.

Рис. 1. Самец *Chorilia japonica* (Miers, 1879), ZMMU, из западной части Берингова моря: *a–c* — внешний вид только что выловленного животного, обросшего губками (возможно из семейства Suberitidae); *d* — очищенный от губок экземпляр, вид сверху; *e* — карапакс, вид сверху; *f* — карапакс, вид сбоку.

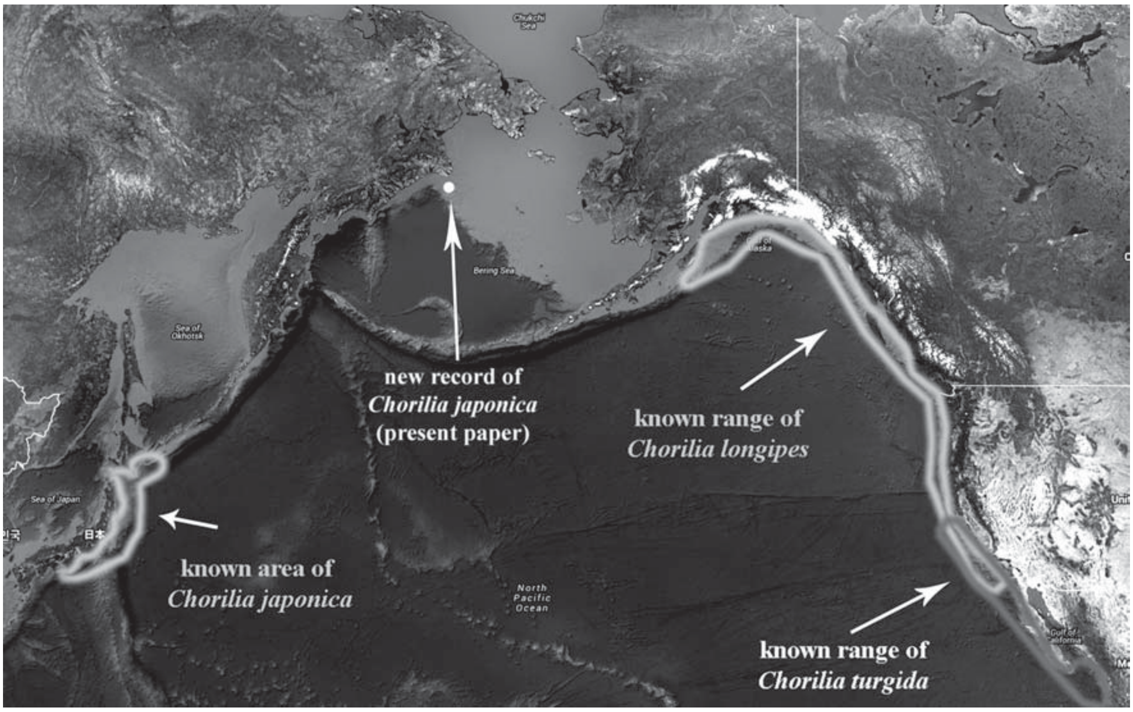


Fig. 2. Known geographical ranges of representatives of *Chorilia* Dana, 1851 in the northern Pacific.
Рис. 2. Географическое распространение представителей рода *Chorilia* Dana, 1851 в северной части Тихого Океана.

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